



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/797,975	03/11/2004	Josephus Hubertus Cornelius Maria Dekkers	146349-1	5007
23413	7590	12/07/2006	EXAMINER	
CANTOR COLBURN, LLP 55 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002				CHEUNG, WILLIAM K
		ART UNIT		PAPER NUMBER
		1713		

DATE MAILED: 12/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.



UNITED STATES PATENT AND TRADEMARK OFFICE

---

Commissioner for Patents  
United States Patent and Trademark Office  
P.O. Box 1450  
Alexandria, VA 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/797,975  
Filing Date: March 11, 2004  
Appellant(s): MARIA DEKKERS ET AL.

---

Karen A. LeCuyer  
(Registration No. 51,928)  
For Appellant

MAILED  
DEC 07 2006  
GROUP 1700

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed September 11, 2006 appealing from the  
Office action mailed April 26, 2006.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

4,775,585	Hagiwara et al.	10-1988
5,939,153	Valyi, Emery I.	8-1999
5,064,599	Ando et al.	11-1991

### **(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

#### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

2. Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hagiwara et al. (US 4,775,585) in view of Valyi (US 5,939,153), and further in view of Ando et al. (US 5,064,599).

*The invention of claims 1-19 relates to a **method of making a shaped article**, comprising: **thermoforming an article** comprising an **exterior surface** comprising an **inorganic biocidal agent** and a **first thermoplastic resin** to form the shaped article, wherein the shaped article has improved biocidal activity compared to the unshaped article.*

Hagiwara et al. (col. 1, line 15-18; col. 4, line 44-68) disclose a process of making a shape article comprising molding an article comprising an exterior surface comprising an inorganic biocidal agent. In view of the substantially identical composition disclosed in Hagiwara et al. and the composition as claimed, and in view that the molding process of Hagiwara et al. inherently involves heating and melting of the thermoplastic resin as claimed, the examiner has a reasonable basis to believe that the claimed "shaped article has improved biocidal activity compared to the unshaped article" is inherently possessed in Hagiwara et al. If appellants disagree, appellants must recognize that Ando et al. (abstract) evidently indicate that upon heating, the low melting component of the resins spreads to cause more zeolite particles to be exposed, which yields higher antibacterial activity on the substrate.

Although Hagiwara et al. (col. 9, line 49-54) clearly disclose that the disclosed molding processes are suitable for making containers, the difference between the invention of claims 1-19 and Hagiwara et al. is that Hagiwara et al. do not literally indicate that thermoforming is involved.

For the following reasons, the claimed invention is considered obvious.

1) Although Hagiwara et al. do not literally indicate that thermoforming is involved in the molding processes for making containers, however, Hagiwara et al. (col. 9, line 49-54) clearly disclose that molding processes are suitable for making containers. Since thermoforming is a process that involves heating the thermoplastic material to form an article having a shape (specification, page 5, 0014), which is also required by the molding process teachings of Hagiwara et al., the examiner has a reasonable basis to believe that both the recited "thermoforming" of claim 1 and "molding" of Hagiwara et al. (col. 9, line 49-54) embrace the same teachings. Therefore, motivated by the expectation of success of making containers from the thermoplastic composition disclosed in Hagiwara et al. (col. 9, line 49-54), it would have been obvious that molding process teachings of Hagiwara et al. generically include the "thermoforming" feature as claimed to obtain the invention of claims 1-19.

2) Valyi (abstract; Figure 1) clearly discloses that containers can be easily produced in a continuous process by thermoforming techniques, motivated by the expectation of success of preparing a container containing inorganic biocidal agent of Hagiwara et al. efficiently in a continuous process operation, it would have been obvious to one of ordinary skill in art to use the thermoforming techniques as taught in Valyi for making the containers of Hagiwara et al. to obtain the invention of claims 1-19.

Regarding the biocidal activities or the concentration of the biocides of claims 3-11, 17-19, in view of the substantially identical composition disclosed in Hagiwara et al. and the composition as claimed, and in view of that the substantially identical process heating a thermoplastic to form a shape article as Hagiwara et al. and as claimed, the examiner has a reasonable basis to believe that these claimed "biocidal activities or the concentration of the biocides" of claims 3-11, 17-19 are inherently possessed in Hagiwara et al.

#### **(10) Response to Argument**

Appellant's arguments filed April 24, 2006 have been fully considered but they are not persuasive. Appellants argue that Hagiwara et al., Valyi and Ando et al. are not related to each other based on their material composition. However, appellants fail to recognize that the motivation to combine the teachings of Hagiwara et al., Valyi and Ando et al. are not based on their material composition. Instead, the motivation to combine their teachings is that Hagiwara et al. (col. 9, line 49-54) clearly disclose that the disclosed process is suitable for making containers. Since plastic containers are typically prepared by a thermoforming process as indicated in Valyi (abstract; Figure 1-5), motivated by the expectation of success of preparing a container containing inorganic biocidal agent, it would have been obvious to one of ordinary skill in art to

recognize the value of thermoforming as a process of choice for making a container or a bottle as taught in Valyi to obtain the invention of claims 1-19.

Appellant must recognize that the typical molding techniques for making containers from thermoplastic materials are injection molding and thermoforming techniques, in which both involves heating the thermoplastic to flow to form an article. It would not be difficult for one of ordinary skill to recognize that the value of using thermoforming for making containers after reading the molding teachings of Hagiwara et al. or the continuous process for making container teachings in the disclosure of Valyi.

Although appellants disagree with the inherency that the examiner set forth for the biocidal properties, appellants must recognize that Ando et al. (abstract) clearly indicate that upon heating, the low melting component of the resins spreads to cause more zeolite particles to be exposed, which yields higher antibacterial activity on the substrate. Furthermore, appellants must recognize that before compounding zeolite and biocidal agent into a thermoplastic, the zeolite with biocidal agent should be at the highest activity. When the zeolite with biocidal agent compounded with a thermoplastic resin (in which the zeolite with biocidal agent are fully encapsulated), the biocidal activities should be at the lowest. Therefore, in view of such observation, it would not be difficult for one of ordinary skill in art to recognize that when more zeolites are exposed after thermoforming, the biocidal activities of the thermoformed object would be increased from its encapsulated form.

Appellants argue that Hagiwara et al., and Valyi are not combinable because the composition of Hagiwara et al. relates to a thermoplastic while the composition of Valyi relates to a multilayer film comprising polyepoxide. However, the examiner disagrees because appellants fail to recognize that the polyepoxide layer of Valyi is merely a barrier coating, the structural layer of the multilayer film of Valyi is a polyester thermoplastic polymer (col. 1, line 52-53), not polyepoxides. Therefore, the polyepoxide coating as taught in Valyi does not prevent or deter the polyester thermoplastic of Valyi from being used to thermoform bottles. Since both Hagiwara et al. and Valyi teach that polyesters are moldable, the examiner has a reasonable basis to maintain the position that the prior art of Hagiwara et al. and Valyi are combinable for the instant rejection. Motivated by the expectation of success of preparing a container containing inorganic biocidal agent, it would have been obvious to one of ordinary skill in art to recognize the value of thermoforming a process of choice for making a container or a bottle as taught in Valyi to obtain the invention of claims 1-19, in view that both the recited "thermoforming" of claim 1 and "molding" of Hagiwara et al. (col. 9, line 49-54) embrace the same teachings, and in view that thermoplastic based containers are typically fabricated in limited number of manufacturing methods, such as injection molding and thermoforming processes.

Therefore, in view of the reasons set forth above, the examiner has a reasonable basis to maintain that appellants' "unexpected results" are actually expected, especially to one of specially skill in the art in the thermoforming industries.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

  
Respectfully submitted,

William K. Cheung, Ph. D.

Primary Examiner

Conferees:

Gulakowski, Randy



Wu, David

